Order No. MAC0002008C3

Service Manual

Room Air Conditioner

CW-XC100AP / CW-XC120AP

SPECIFICATIONS

Specification

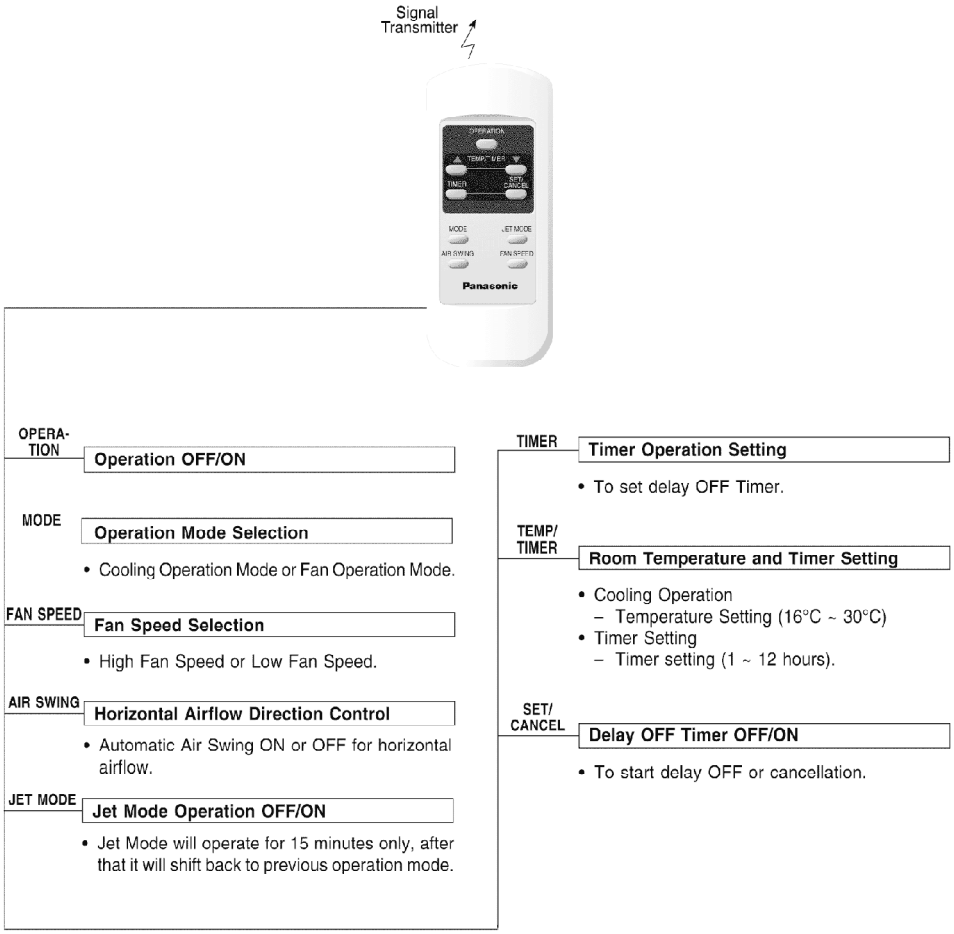
Model	CW-XC100AP	CW-XC120AP
Phase	Single	Single
Voltage	220 V	220 V
Frequency	60 Hz	60 Hz
Cooling Capacity	2.94 kW	3.55 kW
	10,000 Btu/h	12,100 Btu/h
Running Current	4.2 A	5.4 A
Input Power	900 W	1.18 kW
EER	3.27 W/W	3.01 W/W
Starting Current	18.5 A	23.9 A
Compressor Output	650 W	850 W
Noise Level	Indoor (High / Low):	Indoor (High / Low):
	47 dB(A) / 44 dB(A)	48 dB(A) / 44 dB(A)
	Outdoor (High / Low):	Outdoor (High / Low):
	56 dB(A) / 53 dB(A)	56 dB(A) / 53 dB(A)
Moisture Removal	1.7 Ltr/h	2.1 Ltr/h
	3.6 Pint/h	4.4 Pint/h
Air Circulation	8.9 m3/min.	9.3 m3/min.
	310 Ft3/min.	330 Ft3/min.

Model	CW-XC100AP	CW-XC120AP
Dimensions	Height: 375 mm (14-25/32 inches)	Height: 375 mm (14-25/32 inches)
	Width: 560 mm (22-1/16 inches)	Width: 560 mm (22-1/16 inches)
	Depth: 610 mm (24-1/32 inches)	Depth: 610 mm (24-1/32 inches)
Net Weight	44 kg	44 kg
	97 lb	97 lb
Refrigerant (R-22)	640 g	635 g
	22.6 oz	22.4 oz

Panasonic

1. Functions

1.1. Remote Control


Signal
Transmitter
Panasonic
OPERA-
TION
Operation OFF/ON
MODE
Operation Mode Selection
• Cooling Operation Mode or Fan Operation Mode.
FAN SPEED
Fan Speed Selection
• High Fan Speed or Low Fan Speed.
AIR SWING
Horizontal Airflow Direction Control
• Automatic Air Swing ON or OFF for horizontal airflow.
JET MODE
Jet Mode Operation OFF/ON
• Jet Mode will operate for 15 minutes only, after that it will shift back to previous operation mode.
TIMER
Timer Operation Setting
• To set delay OFF Timer.
TEMP/
TIMER
Room Temperature and Timer Setting
• Cooling Operation
– Temperature Setting (16°C ~ 30°C)
• Timer Setting
– Timer setting (1 ~ 12 hours).
SET/
CANCEL
Delay OFF Timer OFF/ON
• To start delay OFF or cancellation.

1.2. Main Unit

POWER — **Power Switch OFF/ON**

OPERATION — **Operation OFF/ON**

Remote Control Signal Receiving Sound

- Can be enable/disable by pressing down Operation OFF/ON button for 10 seconds.

Operation Indicator Light (LED'S)

- **MODE**
  COOL (green) ..... Lights up in Cooling Mode Operation.
  FAN (Orange) ..... Lights up in Fan Mode Operation.
- **FAN SPEED**
  HIGH (Orange)..... Lights up in High Fan Speed Operation.
  LOW (Orange) ..... Lights up in Low Fan Speed Operation.
- **TIMER** (Orange) ..... Lights up in Timer Setting.
- **JET MODE** (Orange)..... Lights up in Jet Mode Operation.

MODE — **Operation Mode Selection**

- Cooling or Fan Mode.

FAN SPEED — **Fan Speed Selection**

- High or Low Speed.

AIR SWING — **Airflow Direction Control**

- Automatic Air Swing ON or OFF for horizontal airflow. (Manually adjusted by hand for vertical airflow.)

JET MODE — **JET MODE Operation OFF/ON**

- Reaches the desired room temperature quickly (This operation automatically will be running under Super High Fan Speed for 15 minutes only).

TIMER — **Timer Operation Setting**

- To set delay OFF Timer.

TEMP/ TIMER — **Room Temperature and Timer Setting**

- Cooling Operation.
  - Temperature setting (16°C~30°C).
- Timer Setting.
  - Timer Setting (1~12 hours).

SET/ CANCEL — **Delay OFF Timer OFF/ON**

- To start delay OFF or cancellation.

Random Auto Restart Control

- Random auto restart after power failure at previous setting mode.

Freeze Prevention Control

- Freeze prevention control for the Evaporator. (Cooling Operation Only)

Starting Current Control

- Fan Motor is delayed for 1.6 seconds when Compressor starts simultaneously.

Time Delay Safety Control

- Restarting is inhibited for approximately 3 minutes.

7 Minutes Time Save Control

- Cooling operation only.

60 Secs. Forced Operation Control

- Once the compressor is activated, it does not stop within the first 60 seconds. However, it stops immediately with remote control stop signal.

Compressor Reverse Rotation Protection Control

- To protect compressor from reverse rotation when there is an instantaneous power failure.

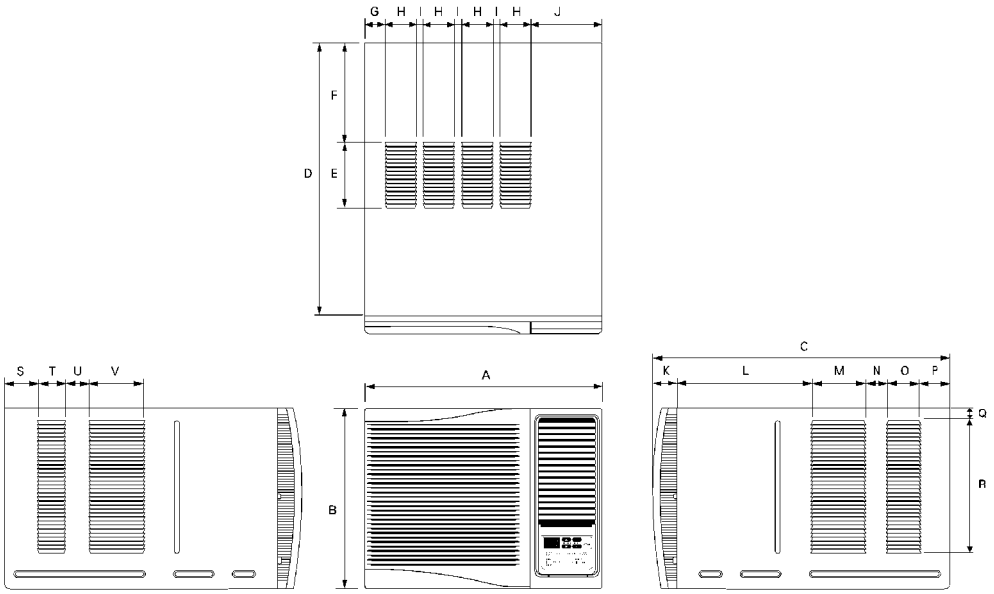
Overload Protector

- Overload protector will trip to protect the compressor when it is overheated. (Open: 135±7°C, Close:75±9°C)

2. Dimensions

2.1. CW-XC100AP / CW-XC120AP /

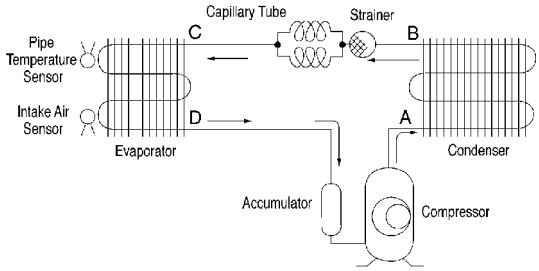
2.1.1. Top View, Front View and Side View.



Item	Unit: Inch (mm)
A - Width	22-1/16” (560)
B - Height	14-25/32” (375)
C - Depth	24-1/32” (610)
D	22-9/32” (566)
E	5-29/32” (150)
F	6-1/2” (165)
G	1-11/16” (43)
H	2-31/32” (75)
I	0-15/32” (12)
J	7-1/8” (181)
K	1-23/32” (44)
L	9-17/32” (242)
M	5-7/16” (138)
N	1-3/16” (30)
O	3-5/8” (92)
P	2-17/32” (64)
Q	0-23/32” (18)
R	11-13/16” (300)
S	3-5/32” (80)
T	2-3/4” (70)
U	1-5/16” (33)
V	5-1/2” (140)

3. Refrigeration Cycle Diagram

3.1. CW-XC100AP / CW-XC120AP /



3.2. CW-XC100AP

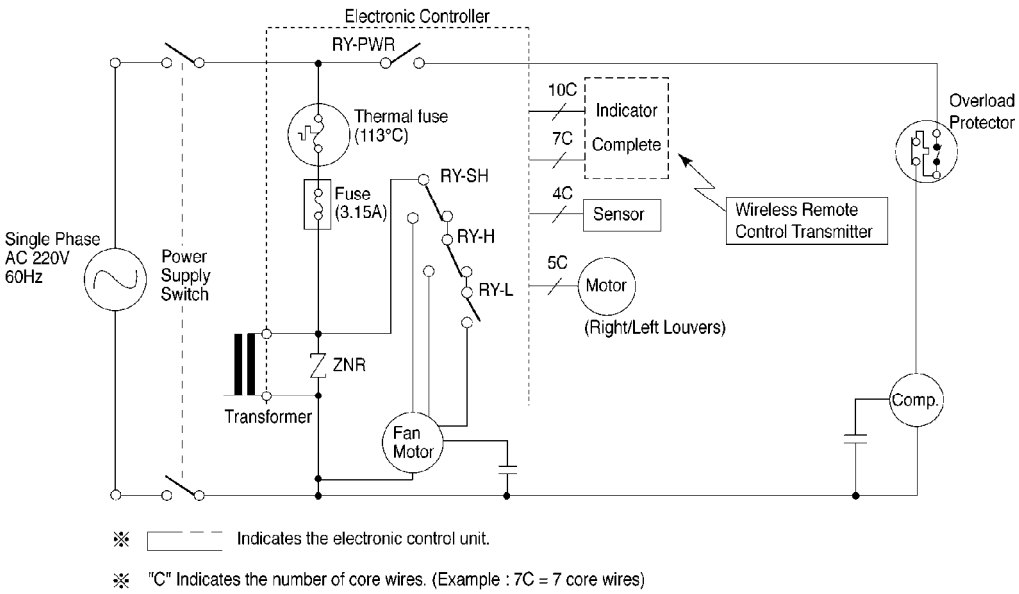
Item	Pressure (PSI)	Temperature (°C)
A	271 ~ 288	58 ~ 74
B	268 ~ 283	35 ~ 40
C	82 ~ 88	8 ~ 12
D	80 ~ 85	9 ~ 13

3.3. CW-XC120AP

Item	Pressure (PSI)	Temperature (°C)
A	275 ~ 293	65 ~ 81
B	273 ~ 287	35 ~ 45
C	77 ~ 82	7 ~ 11
D	74 ~ 80	8 ~ 12

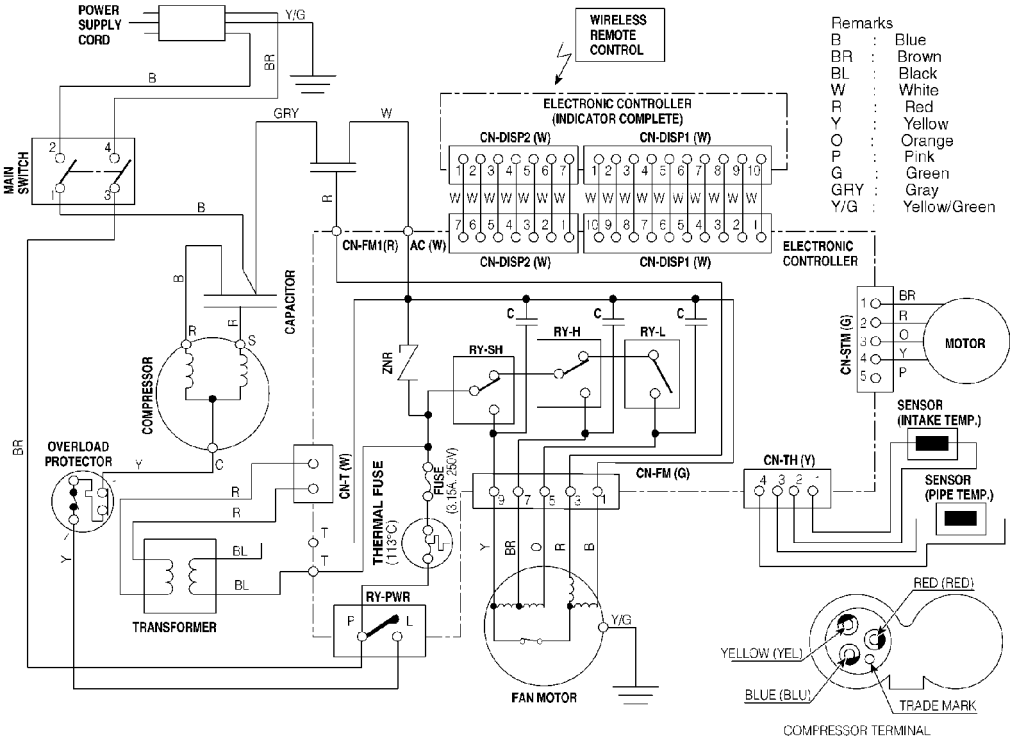
4. Block Diagram

4.1. CW-XC100AP / CW-XC120AP /



5. Wiring Diagram

5.1. CW-XC100AP / CW-XC120AP /



5.2. Resistance of Fan Motor windings and the rated Capacitor.

Model	CW-XC100AP	CW-XC120AP
Connection	CWA951025	CWA951024
Blue - Yellow	79.5 Ω	78.9 Ω
Yellow - Brown	12.5 Ω	10.9 Ω
Brown - Orange	31.2 Ω	36.4 Ω
Red - Yellow	46.3 Ω	47.8 Ω
Capacitor	CWA31610 (5 μ F, 400VAC)	CWA31610 (5 μ F, 400VAC)

5.3. Resistance of Compressor windings and the rated Capacitor.

Model	CW-XC100AP	CW-XC120AP
Connection	2PS132H5AA04	2PS174H5AA02
C-R	2.764 Ω	2.237 Ω
C-S	1.681 Ω	2.710 Ω
Capacitor	CWA31509 (30 μ F, 370VAC)	CWA31509 (30 μ F, 370VAC)

Note: Resistance at 20°C of Ambient Temperature.

6. Air Conditioner Performance Evaluation

Suction & Discharge Air Temperature Difference	Current	Determination	Remedy
-8°C and over (14.4°F)	-As specified.	-Nothing wrong.	-None.
-8°C and over (14.4°F)	-Higher than specified.	-Nothing wrong, outdoor temperature is too high, heat radiation is not efficient.	-Improve heat radiation.
-Under 8°C (14.4°F)	-Higher than specified.	-Something is preventing heat radiation.	-Excessive amount of refrig -Improve heat radiation.
-Under 8°C (14.4°F)	-Lower than specified.	-Leakage of refrigerant or refrigerant system is blocked.	-Locate and repair leak. -Flush refrigeration cycle.
-Under 8°C (14.4°F)	-Higher than specified by 50%.	-Compressor defect.	-Replace the compressor.

Note: Room air humidity is relatively higher, the temperature difference will be smaller.

7. Troubleshooting Guide

Warning: Disconnect unit from electrical power supply before making any electrical checks.

Trouble	Check	Result	Cause	Remedy
Fan Motor and Compressor won't run.	-Supply Voltage -Fuse Box or Circuit Breaker. -Power cord or Wiring Harness. -Temp. Setting.	-Less than 10% by Rated. -Open Contacts. -Pulled loose or Shorted. -Higher than ROOM TEMP.	-Customer Restarted unit immediately without waiting 3 minutes.	-Consult ELECTRICIA -Repair Open Circuit. -WAIT FOR 3 MINUTE -Repair or Replace it. -Set it LOWER.
Fan Motor won't run.	-Objects around Fan. -RESISTANCE between Wires. -Capacitor Fan Motor.	-Locked Fan. -Shorted/ Open circuit. -OHM Meter doesn't Deflect.	-Fan Hitting Cowling or -Foreign Materials. -Frozen Bearings. -Shorted or Burned out. -Capacitor Defect.	-Adjust Fan position s screw. -Remove Foreign Mat -Replace Fan Motor. -Replace Fan Motor. -Replace Capacitor Fa
Compressor won't run (Fan Runs).	-Temp. setting. -RESISTANCE between Terminal and the Compressor Body. -RESISTANCE between Terminals. -Capacitor Compressor. -Overload Protector.	-Higher than room temperature. -Shorted. -Shorted. -OHM Meter doesn't deflect. -Infinity between Terminals.	-Winding Coil touched to the Body. -Rare Shorted or Burnt out. -Capacitor defect. -Overload Protector defect.	-Set it lower. -Replace Compressor -Replace Compressor -Replace Capacitor Compressor. -Replace Overload Pr
Insufficient cooling.	-Temp. Setting. -Ventilation Door open. -Air filter dirty. -Location of installation. -Evaporator/Condenser Coil obstructed. -Unit capacity for the room too small. -Temp difference and running current.	-Higher than room temperature. -Open -Clogged or dirty. -Sunlight hitting outdoor side. -Obstacles. -Clogged or dirty. -Not satisfied. -REFER PERFORMANCE EVALUATION.	-Reduce capacity. -Restricted air circulation. -Restricted Heat Exchanger. -Restricted Heat Exchanger. -Restricted air circulation -Leakage of refrigerant or refrigeration system is blocked.	-Set it lower. -Close Vent door. -Clean or Replace Air -Consider building an -Remove obstacles o unit. -Clean using steam cl -Replace the unit with one. -Locate repair leak. -Flush refrigeration cy

Trouble	Check	Result	Cause	Remedy
Noise.	-Source of Noise	-Vibration. -Intermittent Noise.	-Faulty installation. -Fan hitting objects. -Refrigerant tubing touching each other. -Fan splashing Drain Water.	-Reinstall unit or Rein installation. -Adjust Fan position c foreign materials. -About 1/2" Clearance -Remove drain plug a a drain pan to remove -Set the Drain outlet downward, so that the water can run off.
Water dripping inside room.	-Unit installation. -Drain Tray-STYROFOAM pieces blocking Drain Channel.	-Tilted to inside room. -Clogged.	-Restricted run off. -Clogged or blocked.	-Tilt unit to outside sl -Remove the foreign r

8. Operation Details

8.1. Fan Mode Operation

- Fan operation only. Fan in operation according to Remote Control or Main Unit (Touch Control Panel) setting.

8.1.1. Manual Setting of Fan Speed

- Basic Fan Speed can be manually adjusted (Lo or Hi) by using the Fan Speed Selection Button/Pad at Remote Control or Main Unit (Touch Control Panel).

8.2. Cooling Mode Operation

- Cooling in operation according to Remote Control or Main Unit (Touch Control Panel) setting.

8.2.1. Time Delay Safety Control (3 minute)

- When the compressor is stopped by Power Switch and Operation Switch at the Remote Control or Main Unit (Touch Control Panel), it restart after 3 minutes when the Power Switch and Operation Switch at the Remote Control or Main Unit (Touch Control Panel) is turned ON.
- When the setting temperature is reached during cooling operation, the compressor stops and it will not start for 3 minutes.
- Protection of compressor to balance the pressure in the refrigeration cycle for 3 minutes.

8.2.2. 7 minutes Time Saved Control

- The compressor will start automatically if it has stopped for 7 minutes even if the room temperature is between the compressor

ON temperature and OFF temperature.

8.2.3. Starting Current Control

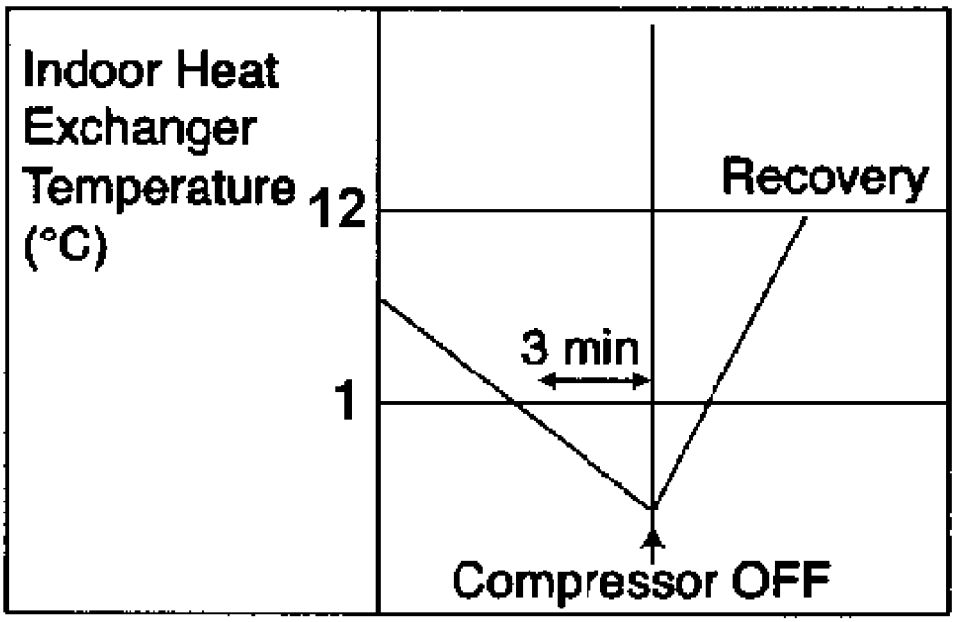
- When the compressor and fan motor are simultaneously started, the fan motor will operate 1.6 seconds later.

8.2.4. Freeze Prevention Control

- If the temperature of the indoor heat exchanger falls continuously below 1°C for 3 minutes or more, the compressor turns off to protect the heat exchanger from freezing. The fan speed setting remains the same.

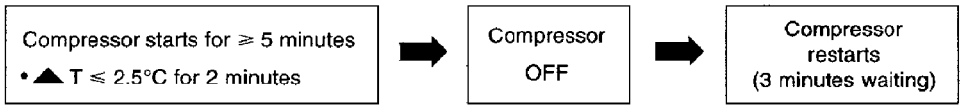
- Compressor restarts when the heat exchanger temperature rises to 12°C (Recovery).

***3 minutes waiting of Time Delay Safety Control is valid for Cooling Operation.**



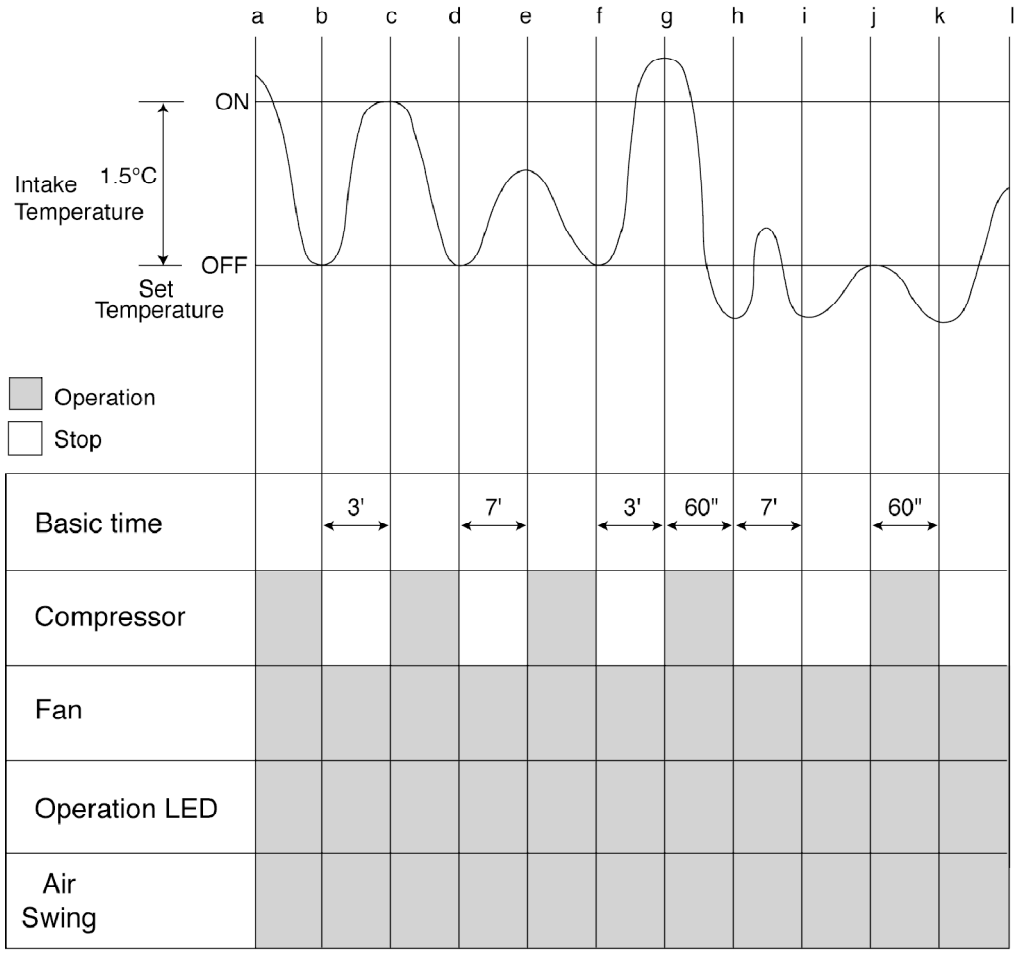
8.2.5. Compressor Reverse Rotation Protection Control

- If the compressor is operating continuously for 5 minutes or longer and the temperature difference between intake air and heat exchanger is 2.5°C or less for 2 minutes, compressor will stop and restart automatically (Time Delay Safety Control is valid).



• ▲T = Intake air temperature – Indoor heat exchanger temperature
This is to protect reverse rotation of the compressor when there is an instantaneous power failure.

8.2.6. Cooling Operation Time Diagram



< Description of operation >
b – c : Time Delay Safety Control (waiting for 3 minutes).
d – e : 7 minutes Time Saved Control.
g – h : 60 sec. forcible operation.

8.3. Jet Mode Operation

- Purpose of this operation is to obtain the setting temperature quickly.

- When the Jet Mode is set during Cooling Operation, the set temperature will be automatically decreased 3°C against the present setting temperature (Lowest limit temperature: 16°C).

- This operation automatically will be running under Super High Fan Speed.

- Sound emitted by the unit will be increased during Jet Mode operation due to increased of air volume.
- Jet Mode will operate for 15 minutes only, after that it will shift back to previous operation mode.
- Jet mode will stop if:-
- Jet Mode button/Pad is pressed again.
- Jet Mode operation has run for 15 minutes.
- Stopped by ON/OFF switch.
- Timer OFF activates.

8.4. Random Auto Restart Control

- If there is a power failure, operation will be automatically restarted after 3 to 4 minutes when the power is resumed.
  It will start with previous operation mode and airflow direction (Time Delay Safety Control is valid) as the operation was not stopped by Remote Control or Main Unit (Touch Control Panel).
- Restart time is decided randomly with 5 parameters:-
- Intake air temperature.
- Setting temperature.
- Fan speed.
- Air Swing blade position.
- Indoor heat exchanger temperature.
- Auto Restart Control is not available when Timer is set.
- If Jet Mode is set during power failure, Jet Mode will not start automatically along with previous operation mode after power resume.
- This control can be omitted by open the circuit of JX1.

8.5. Fan Speed Control

- Manual Fan Speed Control
  Basic fan speed adjustment (2 setting, from Lo to Hi) can be carried out by using the Fan Speed Selection Button/Pad at the Remote Control or Main Unit (Touch Control Panel).

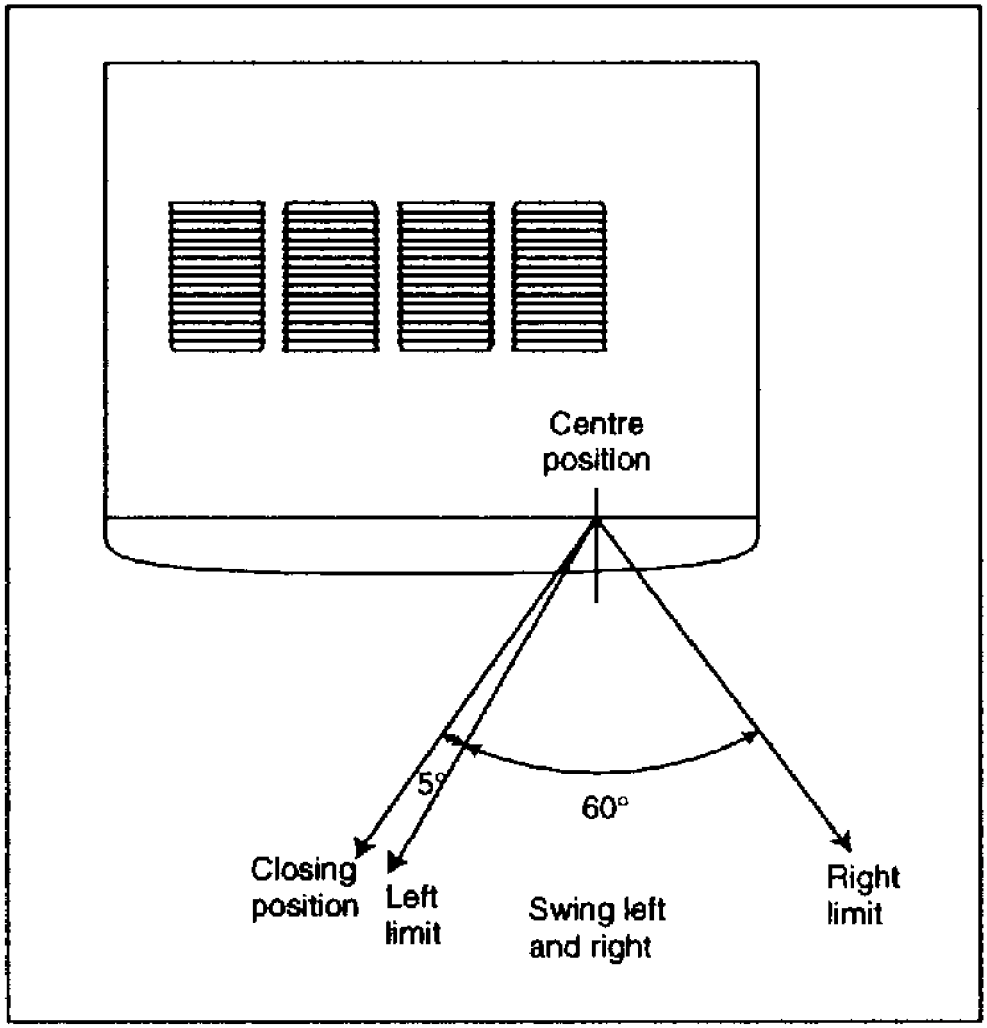
Mode	Fan setting		Fan Speed		
			SHi	Hi	Lo
Cooling	Manual	Normal		o	o
		Jet	O (15 minutes)		
Fan	Manual	Normal		o	o
		Jet	O (15 minutes)		

8.6. Airflow Direction Control

8.6.1. Horizontal Airflow Direction

- When Air Swing Button/Pad is pressed with Remote Control or Main Unit (Touch Control Panel) in the Auto Airflow, the airflow direction louver swings side to side within the full swing range as shown in the “Diagram”.
- The louver can be adjusted by pressing the Button/Pad again at the Remote Control or Main Unit (Touch Control Panel) to the desired louver position.
- When stopped with Remote Control or Main Unit (Touch Control Panel), the louver vane is reset, and stopped at the closing position.

“Diagram”



8.6.2. Vertical Airflow Direction

- The upward and downward airflow direction vane can be adjusted manually by hand.

8.7. Remote Control Signal Receiving Sound

- To switch off the beep sound.

Press the "Operation OFF/ON Button/Pad"continuously for 10 second or more.

Repeat the above if you want to switch ON the beep sound or switch OFF and ON back the Power Switch at the Main Unit.

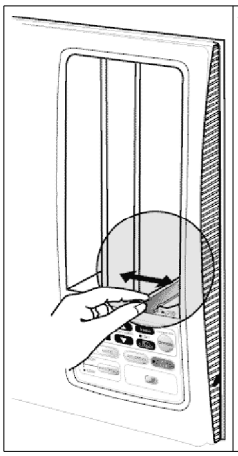
***However, if the "Operation OFF/ON Button/Pad" have been pressed, the previous operation mode will be activated. If you do not require this operation, you may change it by using the Remote Control or Main Unit (Touch Control Panel).**

9. Operating Instructions

9.1. Parts Identification.

9.1.1. Main Unit.

9.1.1.1. Ventilation Lever.

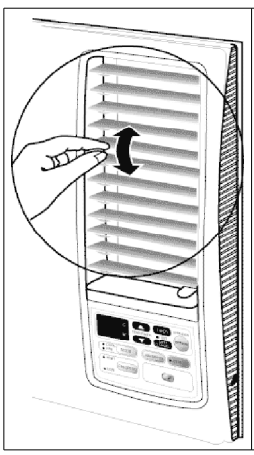


When the slide lever is in the:

-"OPEN" position, the ventilation door opens to allow air, smoke and odors to be expelled from the room.

-"CLOSE" position, the ventilation door is closed and the air inside the room is circulated and conditioned.

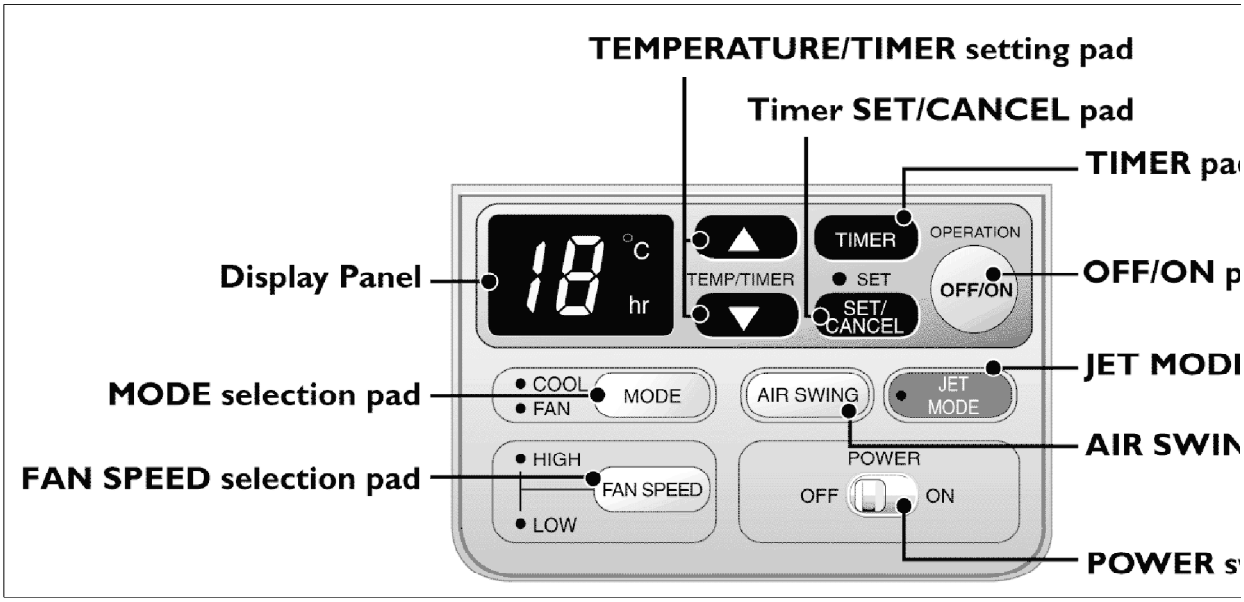
9.1.1.2. Vertical Airflow Direction Vane.



Airflow direction adjustment Up -and-Down.

-The vertical airflow direction vane may be positioned to deflect the air upward, downward or straight on.

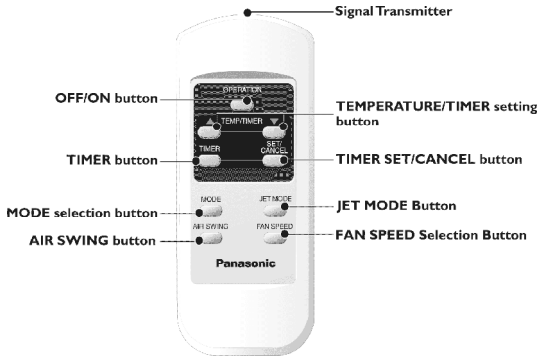
9.1.1.3. Touch Control Panel.

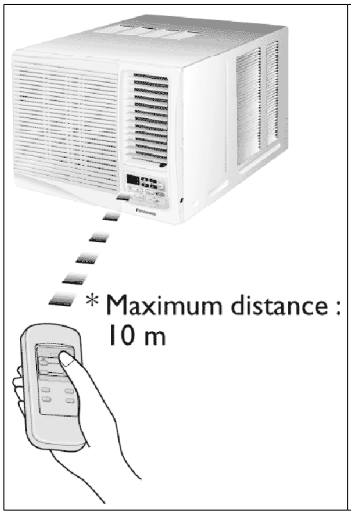


9.1.1.4. Types of Signal Sound.

- One long “Peep” and one short “Pep” (Sound from the main unit).

9.1.2. Remote Control.





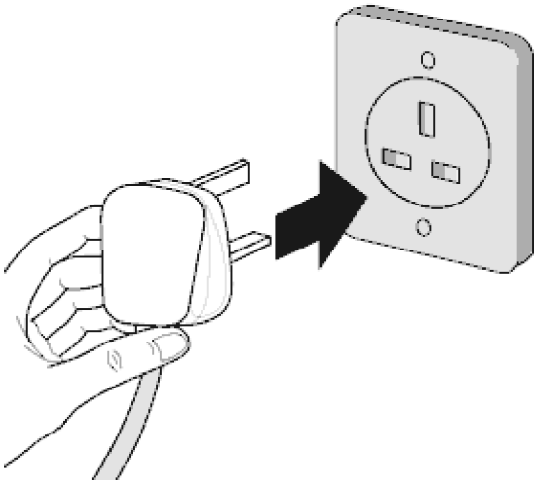
Be sure to observe the following:

- **Aim at the signal receptor at the room air conditioner when operating.**
- **Do not drop or throw the remote control.**
- **Do not place the remote control in a location that is exposed to direct sunlight or next to a heating unit or other heat sources.**

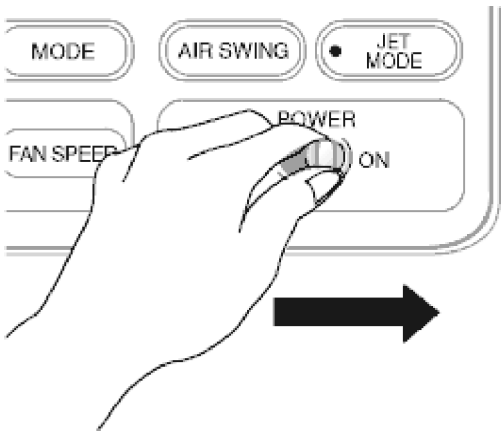
9.2. Preparation Before Operating.

9.2.1. Before Operate the Air Conditioner.

Warning	**Ensure that the power plug is securely inserted.** **- A loose plug may cause a fire or an electric shock.**



1. Insert the power plug securely.



2. Switch on the power by pushing the switch to the right as shown in the illustration.

9.2.2. Operating Conditions.

Use the air conditioner under the following conditions:

- Operating temperature range.

	Indoor side	Indoor side	Outdoor side	Outdoor side
	D.B.T.	W.B.T.	D.B.T.	W.B.T.
Maximum Temperature	32°C	23°C	43°C	26°C
Minimum Temperature	16°C	11°C	16°C	11°C

Note: Humidity may exceed 90%.

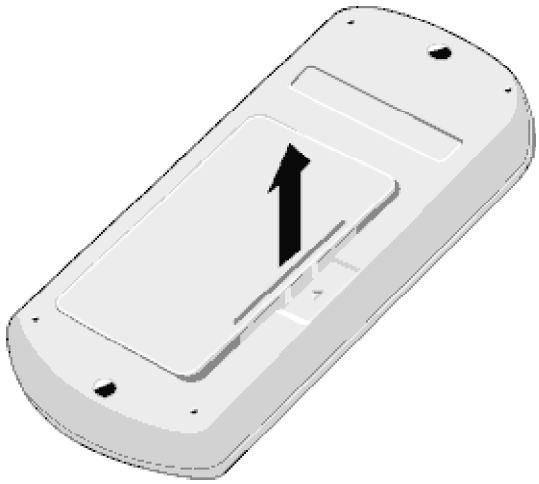
- Continuous operation at over 90% high humidity may create condensation and result in water drops on the intake and outlet vanes.

9.2.3. Notes

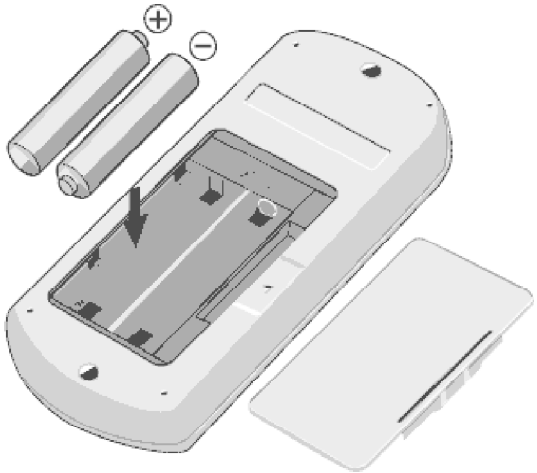
- If the unit is not going to be used for an extended period of time, turn off the power switch. if it is left in the ON position, approximately 2.5W of electricity will be used even if the Main Unit has been turned off by the remote control.

- If operation is stopped, and to be restarted immediately, the unit will resume operation only after 3 minutes.

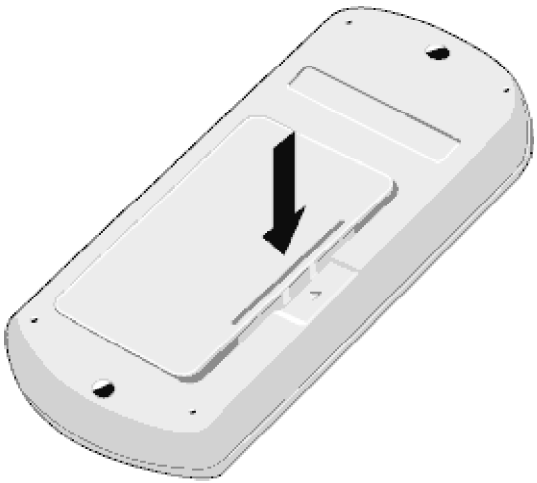
9.2.4. How to Insert Batteries.



1. Open the compartment cover.



2. Be sure that the polarities are correct.



3. Close the compartment cover.

9.2.5. About the Batteries.

- **The batteries can be used for approximately one year.**
- **Do not use rechargeable (Ni-Cd) batteries because such batteries differ from the standard dry cell batteries in shape, dimension and performance.**
- **Be sure to replace the batteries with two new identical batteries.**
- **Remove the batteries if the air conditioner is not going to be used for an extended period of time.**

9.3. Air Conditioner Operation.

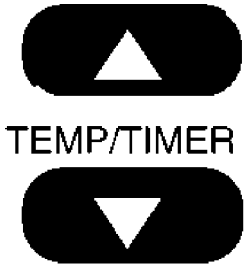
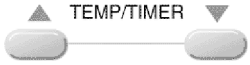
9.3.1. Operating the Unit.

Touch Control Panel	Remote Control	Display	
OPERATION OFF/ON	OPERATION	°C hr	**(1) Start operation by pressing OFF/C** **-The operation will turn on and the display panel w**
OPERATION OFF/ON	OPERATION	°C hr	**(2) To stop the operation, press the C again.** **-The unit will stop operating and the display panel turn off.**

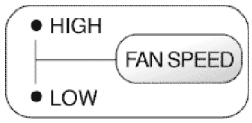
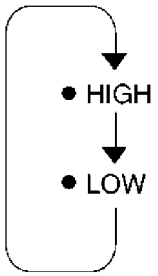
9.3.2. Adjusting Operation Mode.

Touch Control Panel	Remote Control	Indicator	
● COOL ● FAN MODE	MODE	● COOL ● FAN The indicator will change in order as set.	**(1) Press the operation MODE to sele desired operation.** **-The indicator will light up and a "pep" sound will setting contents.** **-COOL mode: To set room temperature to your p cooling comfort.** **-FAN mode: To provide air circulation without co room. During Fan operation, temperature setting selected.**

9.3.3. Setting Temperature.

Touch Control Panel	Remote Control	Display	
		Display will change according to the setting.	**(1) Press TEMP/TIMER "Upward" or "Downward" to set the room tempera** **-The temperature can be set between 16°C and 30°** **Recommended temperature: 26°C ~ 28°C.** **-"Upward": Press to increase temperature by 1°C** **-"Downward": Press to decrease temperature by** **Note: The latest temperature setting memorized and will appear on the dis next time it's turned on.**

9.3.4. Selecting Fan Speed.

Touch Control Panel	Remote Control	Indicator	
		 The indicator will change in order as set.	**(1) Press FAN SPEED to choose the s level of the fan.** **-The indicator will light up and the "pep" sound wi setting contents.** **Note: The latest fan speed setting wi memorized and the indicator will ligh next time the unit is turned on.**

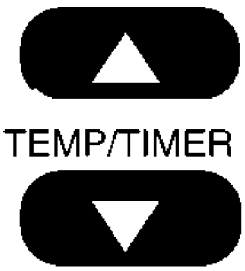
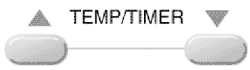
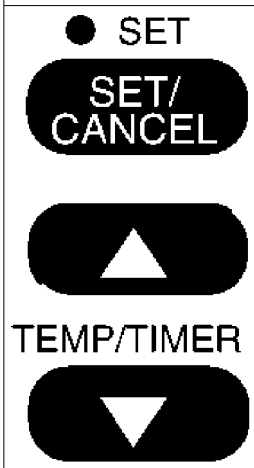
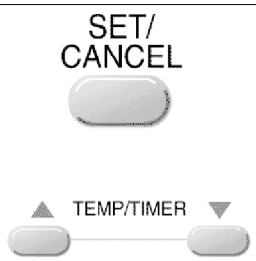
9.3.5. Adjusting Horizontal Airflow Direction.

Touch Control Panel	Remote Control	Indicator	
		No indication will appear.	**(1) Press to select AIR SWING.** **-The air circulation will automatically move the hor louvers left and right for better air distribution arou** **Note: Using your hands to adjust the direction may cause the louvers to malfunction. If this happens, stop op immediately and restart.**

9.3.6. JET MODE Operation.

Touch Control Panel	Remote Control	Display	
			(1) To obtain set temperature quickly **-Press JET MODE.** **-To cancel this operation, press once more.** **-After JET MODE is selected, the operation will go minutes under Super High Fan Speed, after that it to previous operation mode.** **-When the JET MODE is set during Cooling Operat temperature will be automatically decreased 3°C ac present setting temperature (Lowest limit temperat** **Note: Sound emitted by the unit will l increased during JET MODE operatic increased of air volume.**

9.3.7. Setting TIMER.

Touch Control Panel	Remote Control	Display	
			(1) Press the TIMER button. **-The SET/CANCEL indicator light will blink, indicat is required.**
			**(2) Press the TEMP/TIMER "Upward" "Downward" button.** **-Press "Upward" or "Downward" button until the p hour of operation is reached.**
		 	**(3) Press the SET/CANCEL button to complete the setting.** **-At this time, the SET/CANCEL indicator light will s instead of blinking.** **Note: The hour reading will change b the set temperature reading after 10 (You can also revert to temperature s immediately by pressing the TEMP/ T "Upward" or "Downward" button aga**

9.3.7.1. Timer Details.

- **The unit will turn off automatically according to your specified setting.**
- **Timer duration can be set from a minimum of 1 hour to a maximum of 12 hours.**
- **When power failure occurs, the timer setting is cancelled. Once power is resumed, timer is reset.**

Note: The last timer setting will be memorized and will appear on the display the next time you operate the unit with the Timer function.

9.3.8. Check TIMER.

Touch Control Panel	Remote Control	Display	
		 	(1) Press the TIMER button to check **-The figure will be displayed for 10 seconds then w automatically switch back to temperature setting.** **Note: The timer figure will change ac to the time remaining (if you set it to hours from now, the timer will show you check the timer an hour later).**

9.3.9. Cancel TIMER.

Touch Control Panel	Remote Control	Display	
		 	(Cancellation within 10 seconds) **(1) Press the SET/CANCEL button to the timer setting.** **-The temperature reading and SET/CANCEL indica turn off simultaneously.** **Figures will be displayed again 10 seconds later to temperature (or, press the TEMP/TIMER "Upward" "Downward" button to have the temperature readi immediately).**
			(Cancellation after 10 seconds) **(1) Press the SET/CANCEL button to the timer setting.** **-The SET/CANCEL indicator light will turn off. However the temperature remains displayed.**

10. How To Install

10.1. Before installing air conditioner, please read the following:

10.1.1. Electrical Work.

- **Always use at the rated voltage and with a specific air conditioning circuit.**
- **Power supply point shall be the place where there is ease for the power disconnection in case of emergency.**
- **Some installation locations may require installation of a short-**

circuit breaker.

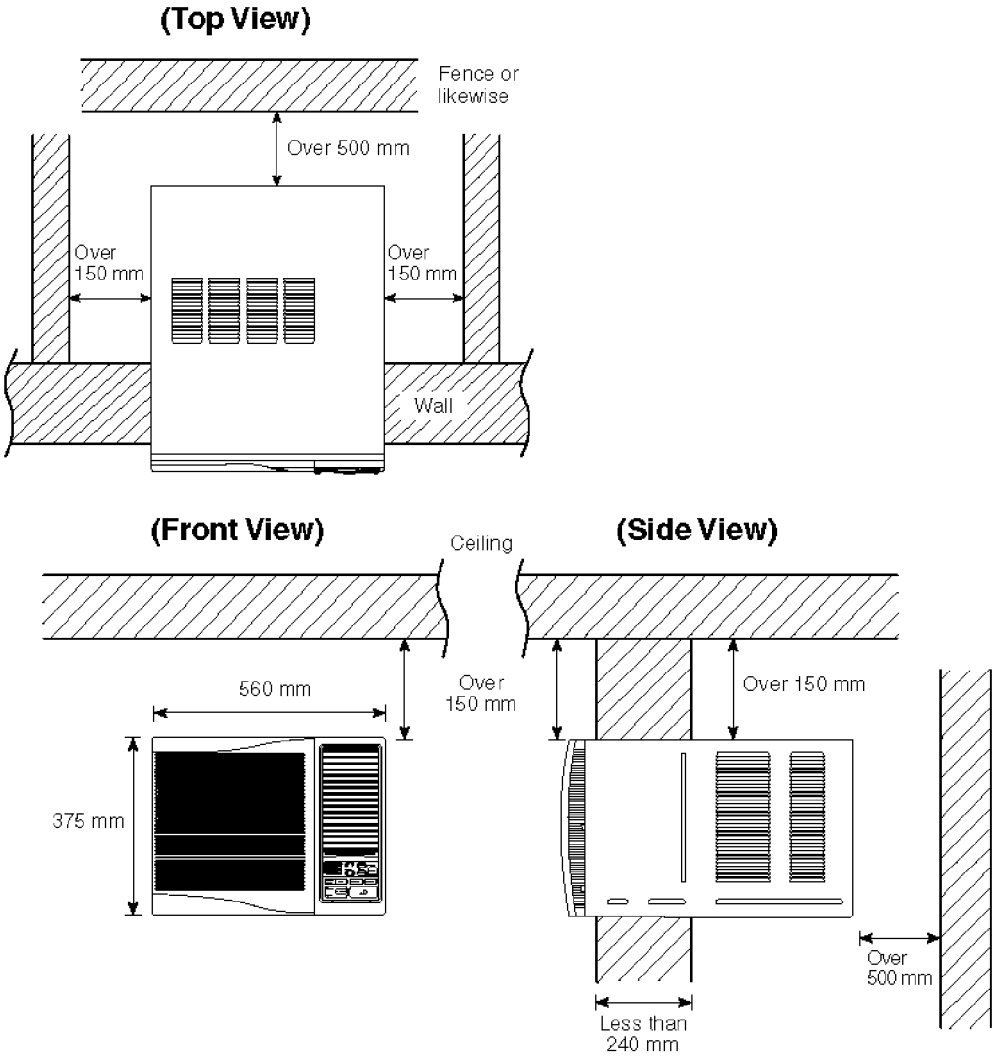
- A 16 Ampere time delay fuse or circuit breaker is required.
- Nominal cross sectional area of power supply wire must be 3 core x 1.25 mm2 or above.
- The power supply must be from an independent circuit.
- All electrical installation must be made in accordance with local wiring and safety regulations wherever applicable.
- There must be a double pole switch with minimum of 3mm contact gap in the fixed installation circuit (Applicable for models without power supply plug only).

10.1.2. Select the Best Location.

- Install the unit at the nearest power outlet.
- The air conditioner should be installed in a dry place where there are no draughts.
- Condensation from the air conditioner must be drained into an appropriate location.
- Do not install in a location where flammable gas leaks is a possibility.
- Usage in locations where the air is salty such as coastal areas or near hot spas, or where sulphurous gas is generated, may lead to a malfunction.
- Do not install this appliance in a laundry room or other locations where water may drip from the ceiling, etc.
- Select an installation location which is rigid and strong enough to support or hold the unit and select a location for easy maintenance.

10.2. Preparation for Installation.

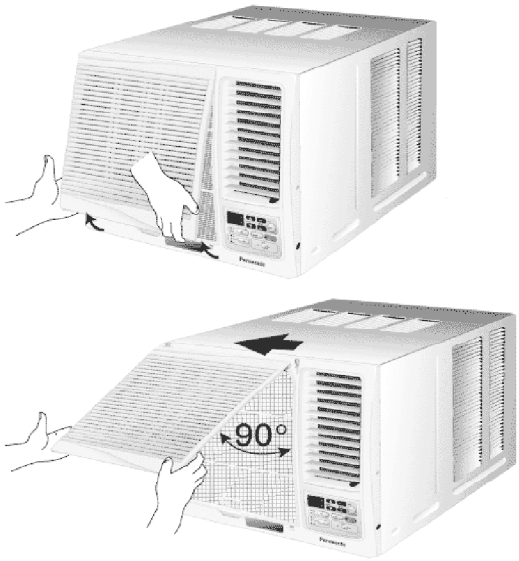
- There should not be any obstacles surrounding the unit.
- Prepare an installation hole that is only slightly bigger than the cabinet size.



10.3. Installation Procedure.

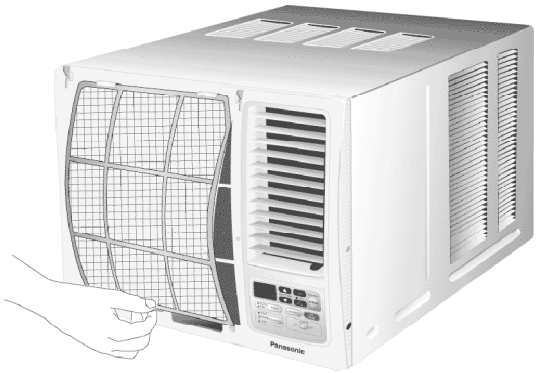
10.3.1. Remove the Front Intake Grille.

- Pull up the Front Intake Grille about 90° and slide it slightly to the left to unhook the tabs.



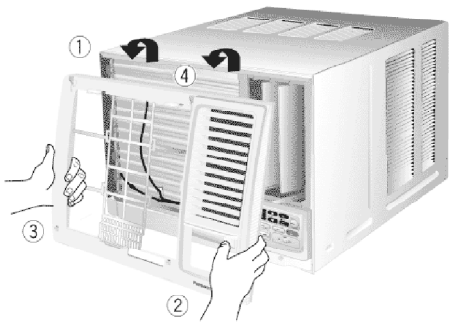
10.3.2. Remove the Air Filter.

- Tilt up and pull out the air filter by the holder.



10.3.3. Remove the Front Grille.

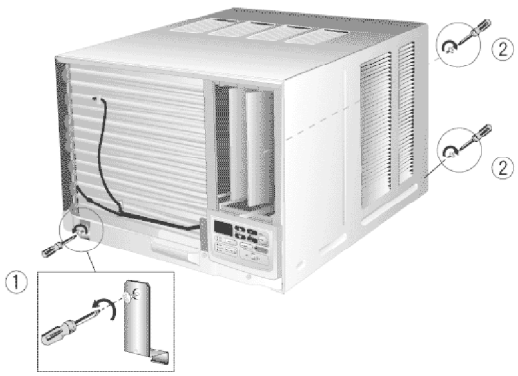
1. **Remove the adhesive tapes from all sides of the Front Grille.**
2. **At the bottom right side of the Front Grille, press inward on the Cabinet near the Power Cord and pull the grille outward to the right until the right tab releases.**
3. **At the bottom left side, push inward on the Cabinet and pull the grille outward to the left to release the left tab. Do not pull the bottom edge toward you more than 3 inches as to prevent top two tabs from damage.**
4. **Slide the Front Grille upward to free the two top tabs from slots at the top of the Cabinet.**



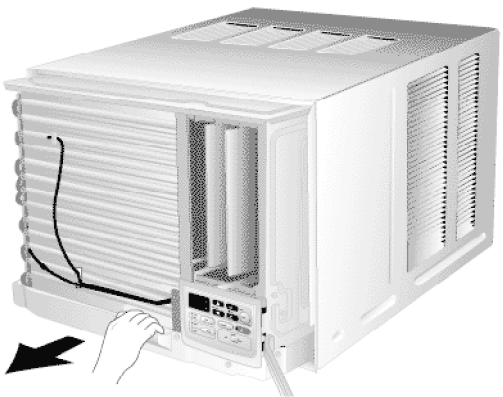
10.3.4. Remove the Chassis from the Cabinet.

1. Unscrew and remove the Chassis Locking Bracket.

2. Unscrew and remove from rear Cabinet.

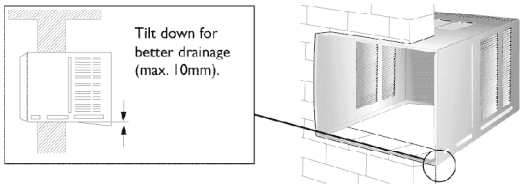


10.3.5. Slide the Chassis out from the Cabinet.

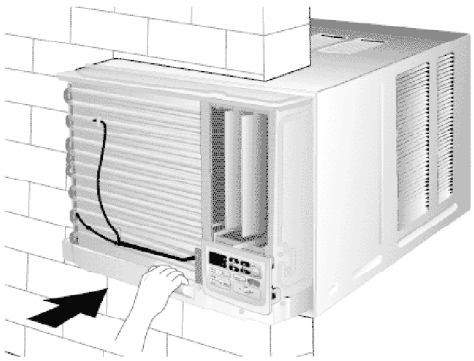


10.3.6. Place Cabinet into the installation hole, then secure it by wood screws or nails.

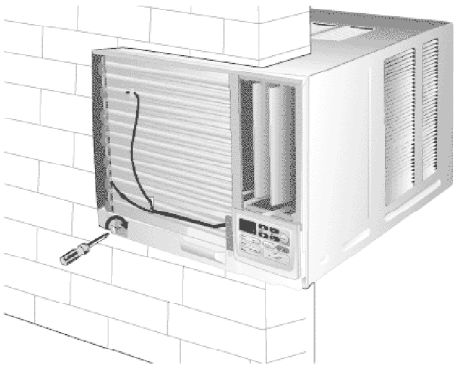
- Note: Tilt down for better drainage (max. 10mm).



10.3.7. Slide the Chassis back into the Cabinet.

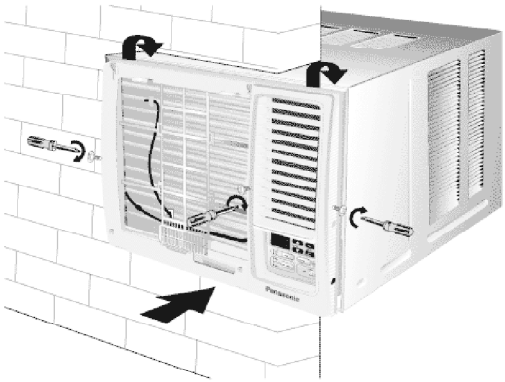


10.3.8. Lock the Chassis back to the Cabinet by using back the Chassis Locking Bracket.

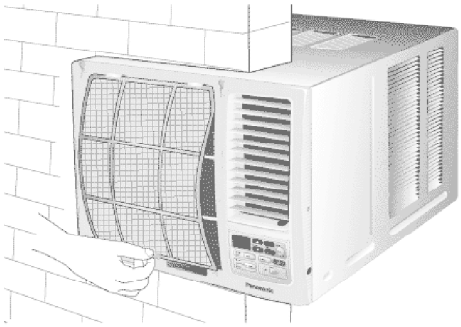


10.3.9. Reattach the Front Grille to the Cabinet and secure it with screws.

- Note: Depending upon the location of the AC outlet, route the AC cord to either the left or right side while installing the Front Grille.

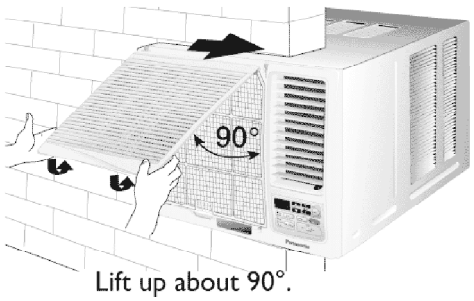


10.3.10. Insert the Air Filter.



10.3.11. Reattach the Front Intake Grille.

- Slide the Front Intake Grille slightly to the right to reattach the tabs and then push down to close tight.
Note: A"Click" sound can be heard when the Front Intake Grille is pushed down.



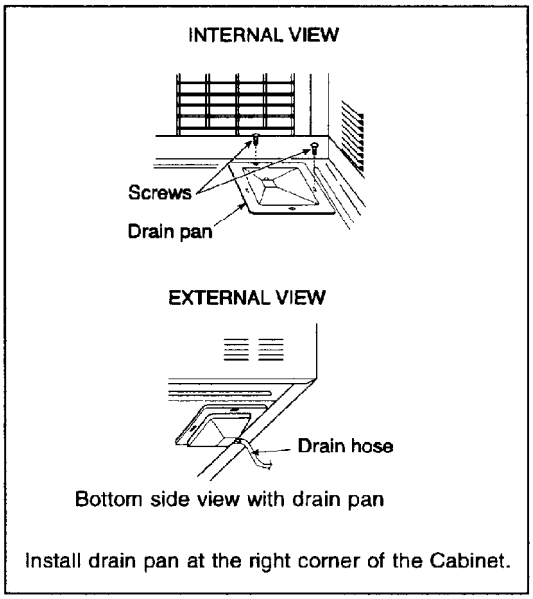
10.4. Condensed Water Drainage.

This air conditioner employs a "Slinger-Up System" which is designed to splash the condensed water on the condenser coil for maximum cooling efficiency, thus producing a splashing sound.

If the splashing sound annoys you, you can provide an outside drainage by using the following procedure which may, however, cause a small loss of performance.

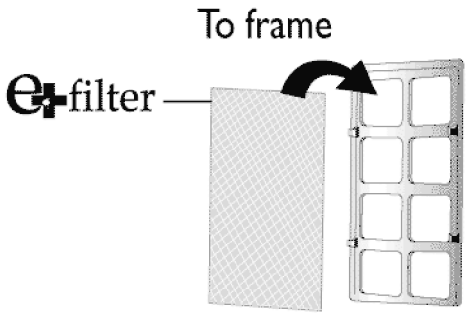
1. **Slide out the Chassis from the Cabinet.**
2. **Remove the rubber plug from the Base Pan.**
3. **Install the Drain Pan at the right corner of the Cabinet with 2 screws.**
4. **Connect the drain hose to the outlet of Drain Pan bottom.**
5. **Slide the Chassis back into the Cabinet.**

Note: Drain hose or tubing can be purchased locally to satisfy your particular needs.

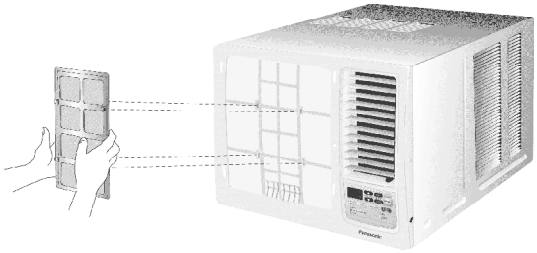


10.5. E+Filter Installation (Optional).

1. **Attach the E+Filter (Part No. CZ-SF6P) to the frame (Part No. CZ-SFW6P).**



2. **Slot in the E+Filter and the frame to the Front Grille.**

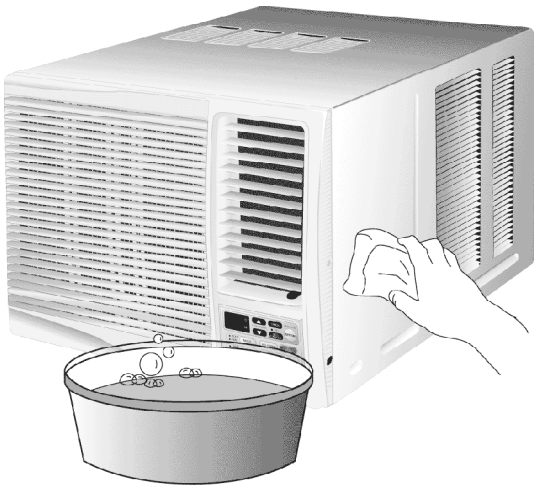


11. Care and Maintenance

Caution: Always turn off the air conditioner and the main power supply before unplugging the power cord to clean the unit.

11.1. Cleaning the Unit.

Clean the Cabinet, Front Grille with a mild soap or detergent and lukewarm water.



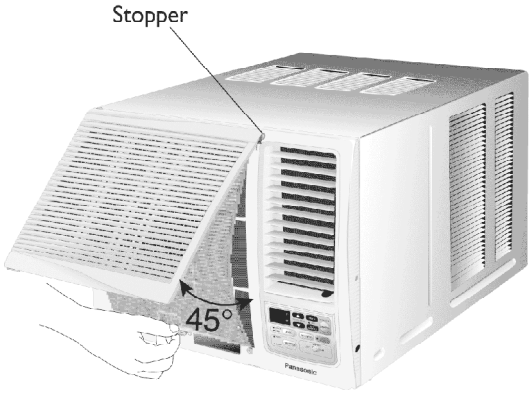
11.2. Cleaning the Front Intake Grille.

Gently wash with water and a sponge. (Do not use a scrubbing brush or other hard cleaning aids).

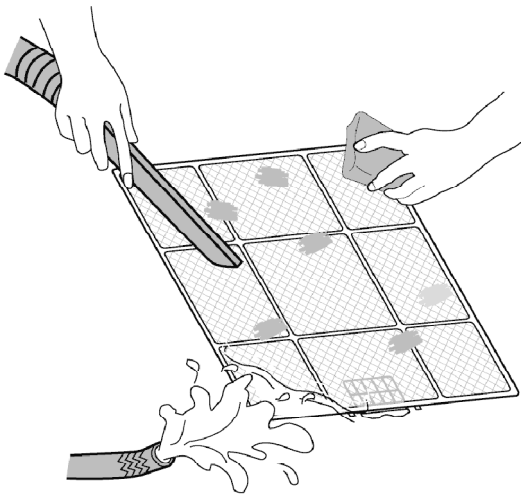
11.3. Cleaning the Air Filter.

1. Pull up the Front Intake Grille.

2. Lift up the Front Intake Grille at 45° until it is supported by the stopper.



3. Tilt up and pull out the Air Filter by the holder.
4. Vacuum the front of the filter and then wash the back of it with water. If it is badly soiled, wash with a mild household detergent.



11.4. E+Filter (Optional)

It is recommended to replace the E+Filter (Part No. CZ-SF6P) every 3 months.

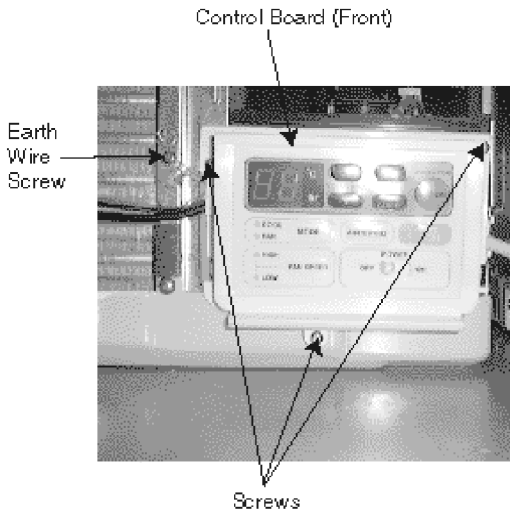
Note: Do not clean with benzene, thinner, scouring powder or corrosive chemicals. Do not dry the Front Intake Panel or the Air filter in direct sunlight. Exposure to direct sunlight may discolor or deform the panel.

12. Service Information

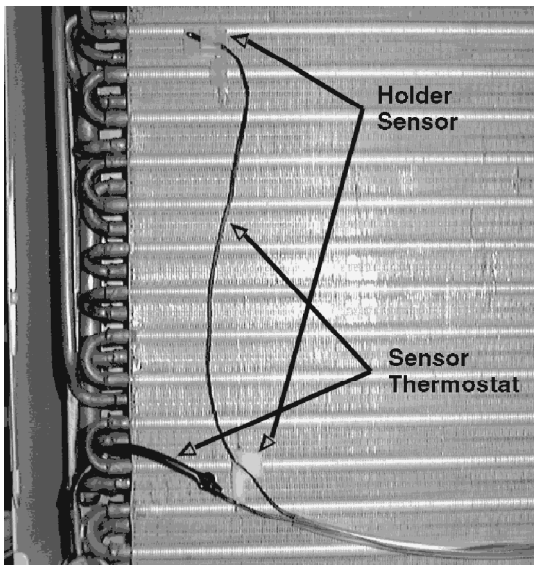
12.1. Removal of the Control Board

1. Removal of the Front Intake Grille (refer to page 17).
2. Remove the Air Filter (refer to page 17).

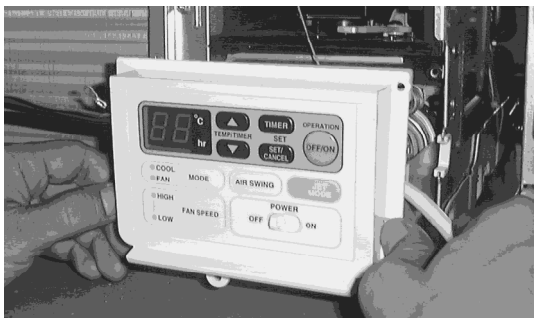
3. **Remove the 3 screws from the Front Grille.**
4. **Remove the 3 screws from the Control Board (Front). Release the earth wire (Yellow-Green) screw.**



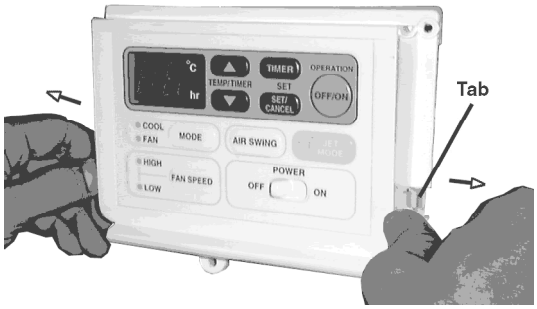
5. **Release the sensor thermostat from the holder sensor.**



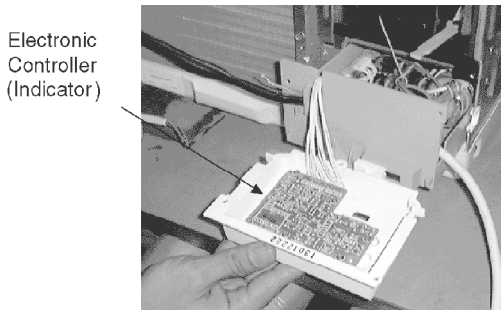
6. **Slide the Control Board (Main) out from the chassis.**



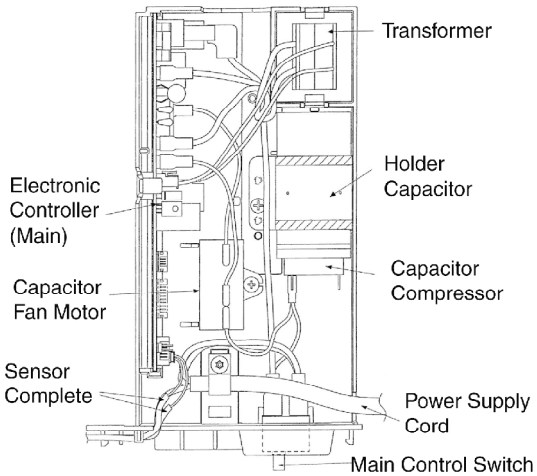
7. Press left and right side tab to release the Control Board (Front).



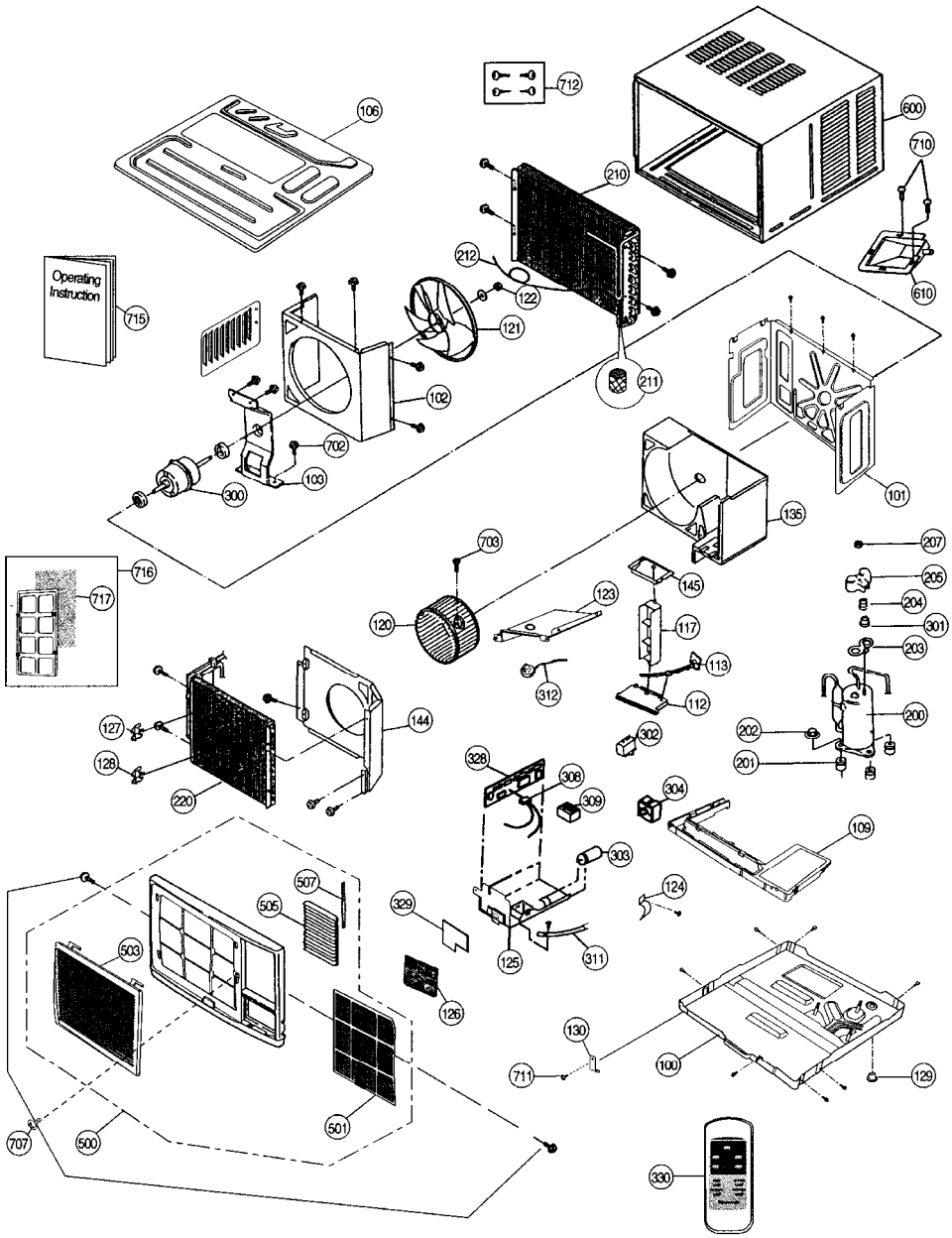
8. Electronic Controller (Indicator Complete) is attached inside the Control Board (Front).



- Control Board part location.



13. Exploded View



(Note)

- The above exploded view is for the purpose of parts disassembly and replacement.

- The non-numbered parts are not kept as standard service parts.

14. Replacement Part List

Ref. No.	Part Name & Description	Qty.	CW-XC100AP	CW-XC120AP	Remarks
100	Base Pan Complete	1	CWD52K1006A	<----	
101	Bulkhead Complete	1	CWD53C1007	<----	
102	Air Guide - Propeller Fan	1	CWD311005	<----	
103	Bracket - Fan Motor	1	CWD541006	<----	
106	Top Plate	1	CWD64C1004	<----	
109	Drain Tray - Evaporator	1	CWH401006	<----	
112	Holder - Ventilation Lever	1	CWD911024	<----	
113	Ventilation Lever	1	CWH221001	<----	
117	Vane - Air Swing	1	CWE241006	<----	
120	Blower Wheel Complete	1	CWH01K1002	<----	
121	Propeller Fan	1	CWH001002	<----	
122	Nut - Propeller Fan	1	CWH56032	<----	
123	Holder - Air Swing Motor	1	CWD911028	<----	
124	Holder - Capacitor (Compressor)	1	CWH301003	<----	
125	Control Board (Main)	1	CWH102032	<----	
126	Control Board (Front)	1	CWH102034	<----	
127	Holder - Sensor	1	CWH32142	<----	
128	Holder - Sensor	1	CWH32085	<----	
129	Drain Plug - Base Pan	1	CWH4611062	<----	
130	Chassis Locking Bracket (Left)	1	CWD932055	<----	
135	Air Guide - Blower Wheel	1	CWD321007	<----	
144	Air Guide - Blower Wheel (Front)	1	CWD321008	<----	
145	Supporter - Air Swing	1	CWD932038	<----	
200	Compressor	1	2PS132H5AA04	2PS174H5AA02	
201	Bushing - Compressor Mount	3	CWH50072	<----	
202	Nut - Compressor Mount	3	CWH4582065	<----	
203	Gasket - Terminal Cover	1	CWH7070603	<----	
204	Holder - Overload Protector	1	CWH7041200	<----	
205	Terminal Cover - Compressor	1	CWH7070205	<----	
207	Nut - Terminal Cover	1	CWH7080300	<----	
210	Condenser	1	CWB32C1033	<----	
211	Strainer	1	CWB11025	<----	
212	Capillary Tube	1	CWB15K1009	CWB15K1008	
220	Evaporator	1	CWB30C1030	<----	
300	Fan Motor	1	CWA951025	CWA951024	
301	Overload Protector	1	CWA121026	CWA121017	
302	Capacitor - Fan Motor (5 μ F , 400VAC)	1	CWA31610	<----	
303	Capacitor - Compressor (30 μ F, 370VAC)	1	CWA31509	<----	
304	Main Control Switch	1	CWA04079	<----	
308	Sensor Complete	1	CWA50C2037	<----	
309	Transformer complete	1	CWA40C237	<----	
311	Power Supply Cord	1	CWA20C2067	<----	
312	Air Swing Motor	1	CWA98161	<----	
328	Electronic Controller (Main)	1	CWA742156	<----	
329	Electronic Controller (Indicator)	1	CWA742060	<----	
330	Remote Control Complete	1	CWA75C2029	<----	
500	Front Grille Complete	1	CWE11C2070	<----	
501	Air Filter	1	CWD001009	<----	
503	Intake Grille	1	CWE221009	<----	
505	Vane	12	CWE241007	<----	
507	Link - Vanes	1	CWE261004	<----	
600	Cabinet Complete	1	CWE00C1005	<----	
610	Drain Pan	1	CWH40175	<----	

Ref. No.	Part Name & Description	Qty.	CW-XC100AP	CW-XC120AP	Remarks
702	Screw - Bracket Fan Motor	4	CWH55101	<----	
703	Screw - Blower Wheel	1	CWH4580326	<----	
707	Screw - Front Grille Mount	1	CWH82C1027	<----	
710	Screw - Drain Pan	1	CWG86C733	<----	
711	Screw - Chassis Locking Bracket	1	XTT4+8B	<----	
712	Screw - Unit Installation	1	CWG86C280	<----	
715	Operating Instructions	1	CWF563117	<----	
716	Frame and E+Filter	1	CZ-SFW6P	<----	(A) & (B)
717	E+Filter	1	CZ-SF6P	<----	(A) & (B)

- The above parts are kept for seven years in accordance with MEI service policy.
- However, longer lead time will be taken in supplying the non-numbered parts.
- All parts are supplied from MAICO, Malaysia (Vendor Code: 061).
- (A): Optional part.
- (B): Supplied through sales route.

15. Electronic Part List

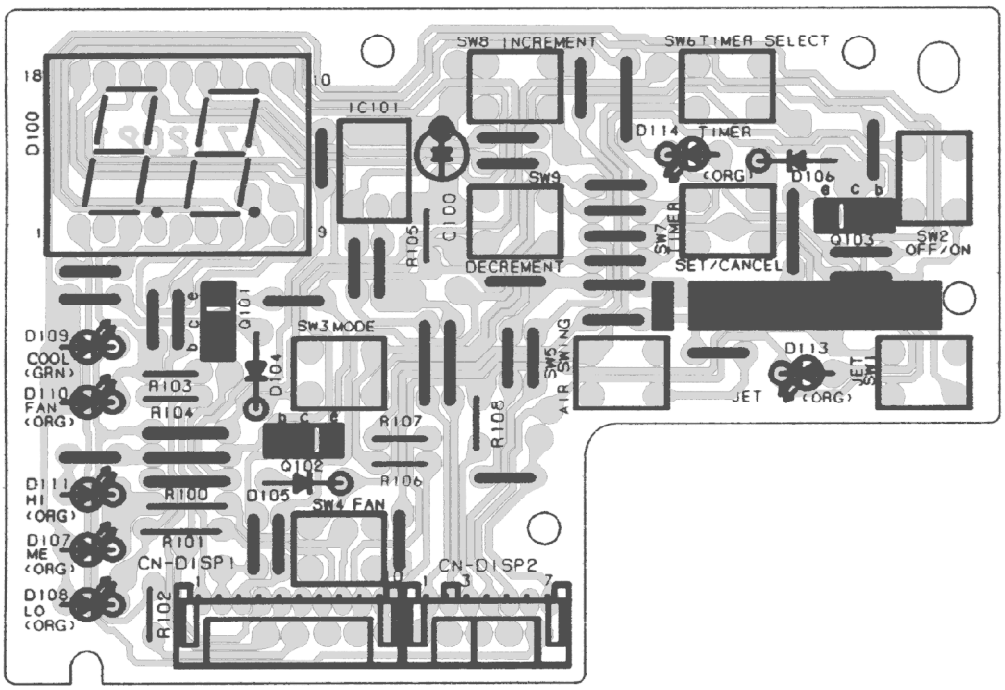
- Electronic Controller - Main (CWA742156)

Symbol	Description & Name	Part No.
IC1	Integrated Circuit	A52MN427MC
IC2	Integrated Circuit	A52MPA2003C
IC3	Integrated Circuit	A52BR9011B
IC4	Integrated Circuit	A52C040
IC5	Integrated Circuit	A52C094
Q1, Q2	Transistor	A55C1740STPS
Q3	Transistor	A55C1741ASTR
Q4	Transistor	A55UN421FTA
X1	Resonator	A45ST4.0MG04
ZD1	Diode	A54D7.5EL1TB
D1	Diode	A54RA15-01V3
DB1	Diode Complete	A54CS1VB20E
ZNR1	Zener Diode	ERZVEAV511
RY-L	Relay	A00161
RY-H	Relay	A00160
RY-SH	Relay	A00160
RY-PWR	Relay	A00106
FUSE	Fuse	XBACW067
BZ1	Buzzer	A48039

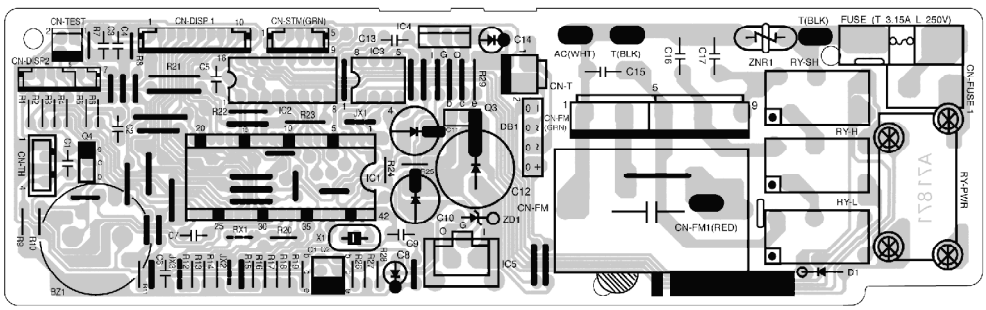
- Electronic Controller - Indicator Complete (CWA742060)

Symbol	Description & Name	Part No.
IC101	Integrated Circuit	A52SPS-440-2
Q101 ~ Q103	Transistor	A55DTB123EST
D100	Diode	A54LB-602MA2
D104 ~ D106	Diode	A54MA165TA5
D108, D110 ~ D111, D113 ~ D114	Diode	A54SLR-325DC
D109	Diode	A54SLR-325MC
SW1 ~ SW9	Switch	A01105

16. Electronic Circuit / Indicator Complete



17. Electronic Circuit / Main

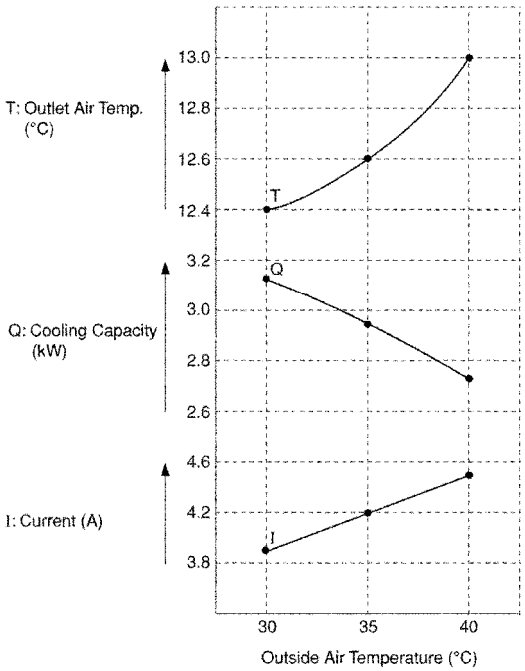


18. Technical Data

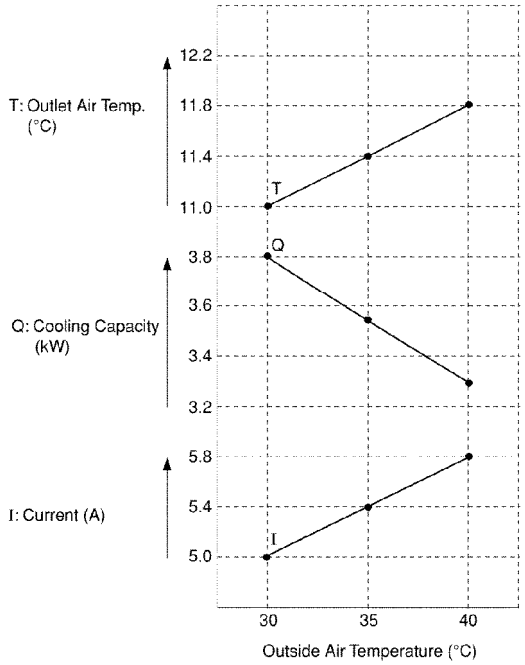
18.1. Operation Characteristics.

- Cooling Characteristics Vs. Outdoor Temperature.

1. CW-XC100AP

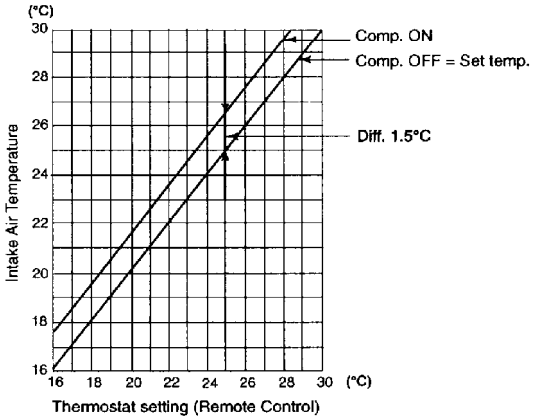


2. CW-XC120AP



18.2. Thermostat Characteristics.

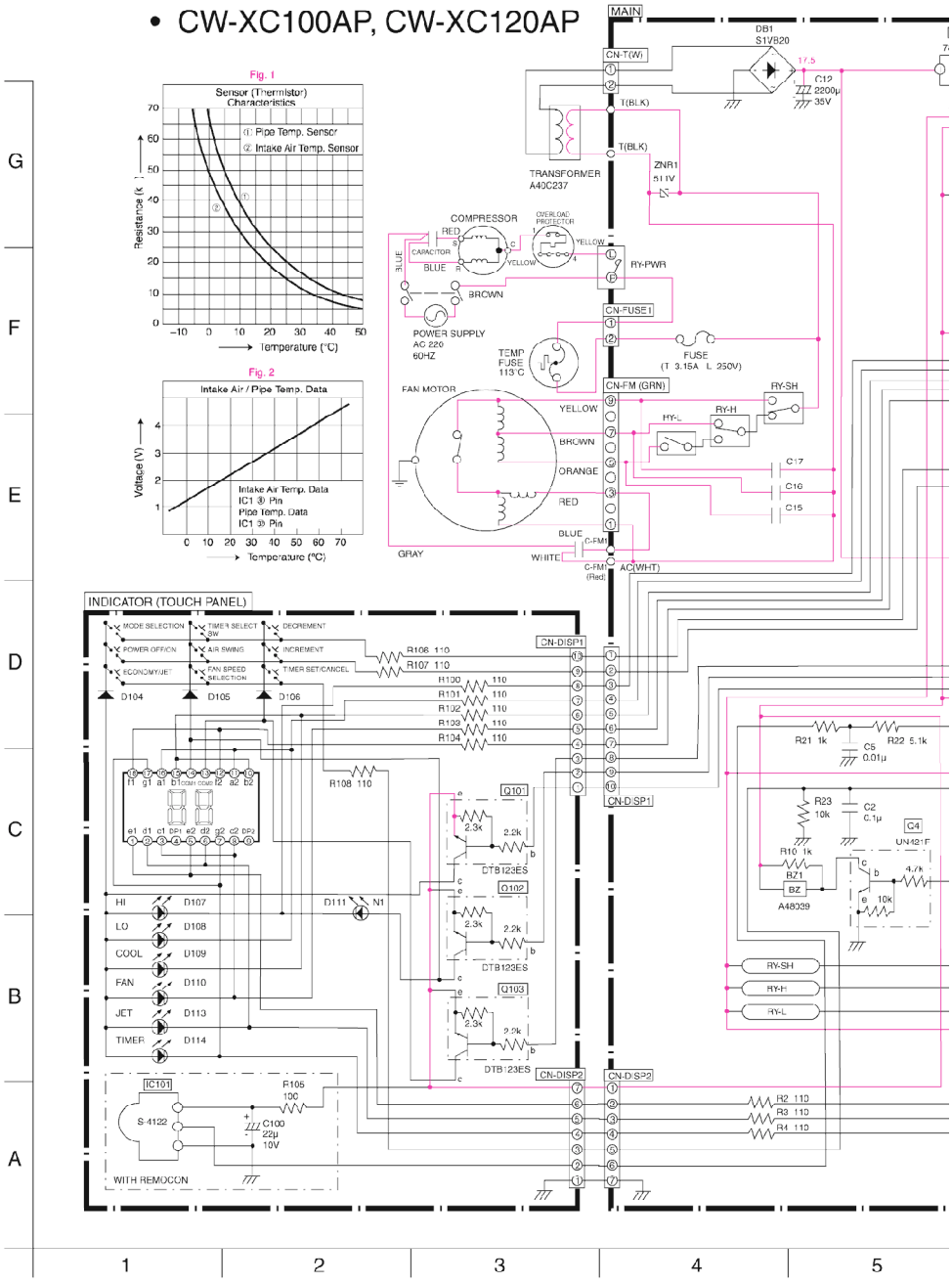
- Cooling

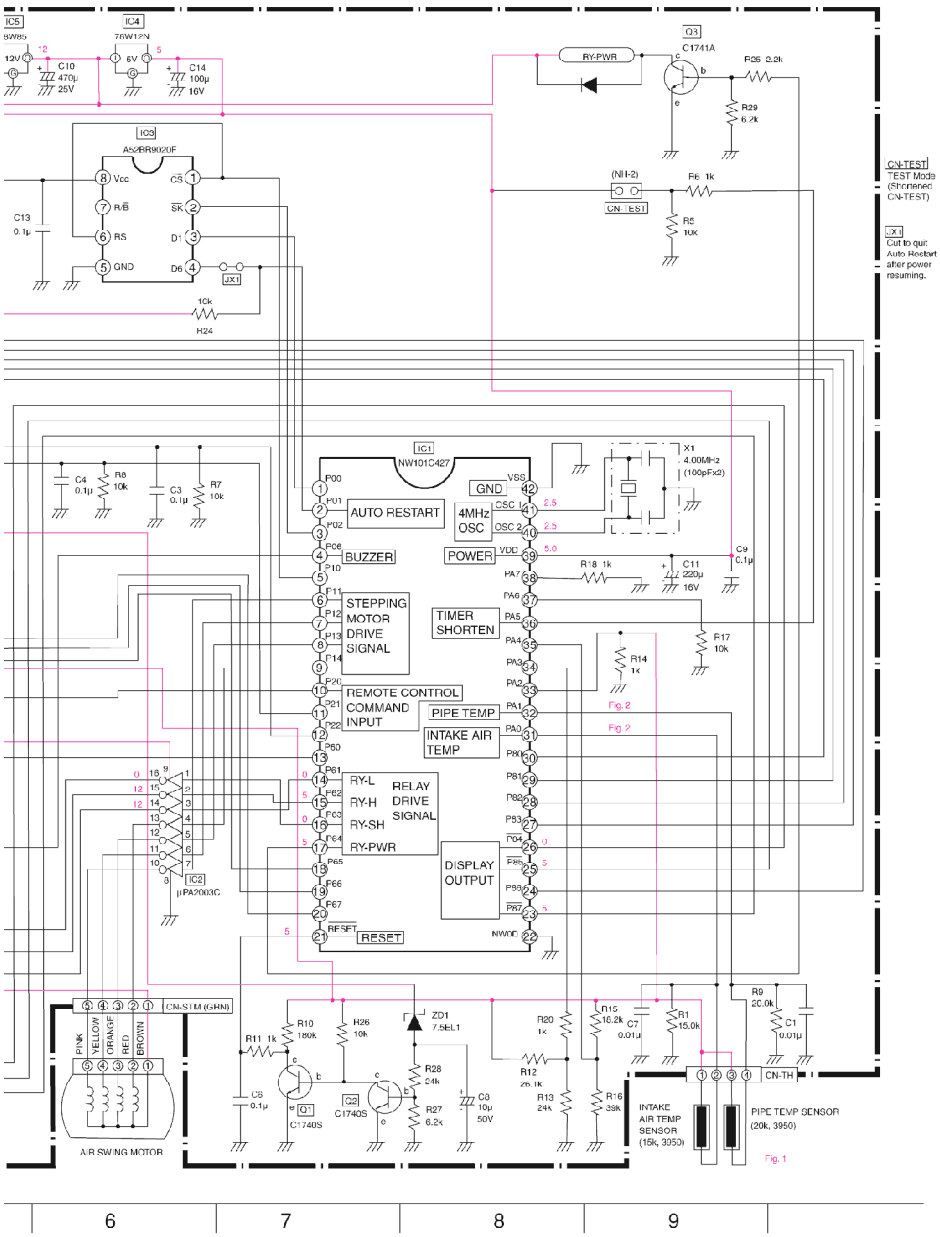


19. Electronic Circuit Diagram

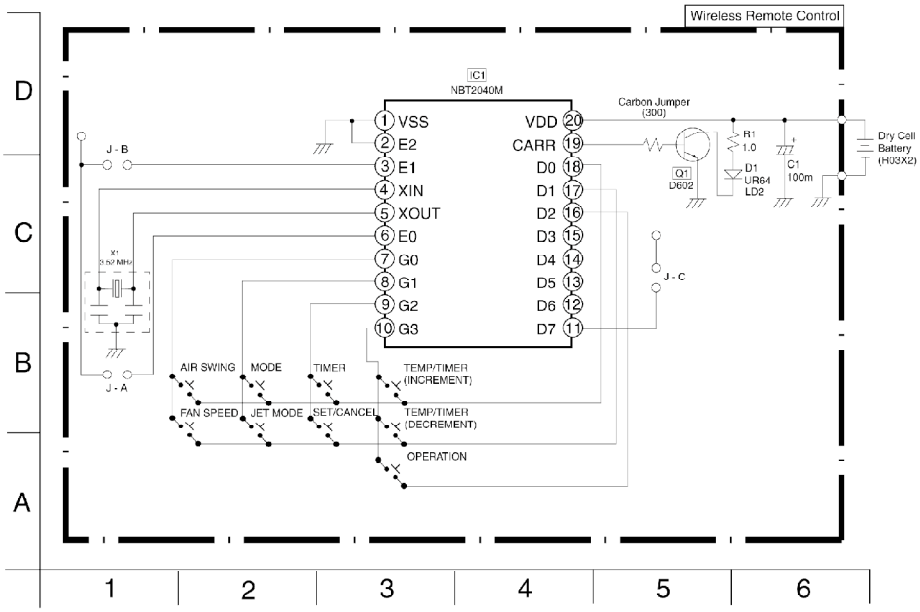
19.1. Electronic Circuit Diagram (Main Unit).

- CW-XC100AP, CW-XC120AP





19.2. Electronic Circuit Diagram (Remote Control).



19.3. How to use electronic circuit diagram.

Before using the circuit diagram, read the following carefully.

- Voltage measurement

Voltage has been measured with a digital tester when the fan is set at high fan speed under the following conditions without setting the timer.

Use them for servicing.

Voltage indication is in red.

	Intake air temperature	Temperature setting	Discharge air temperature	Pipe temperature
Cooling	27°C	16°C	17°C	15°C

- Indications for resistance

- a. K...K Ω

b. W...WATT

c. M...M Ω

d. Not indicated...1/4W

- Type

Not indicated	Carbon resistor Tolerance (+-) 5%
	Metal oxide resistor Tolerance (+-) 1%

- Indications for capacitor

Unit	- μ ... μ F -P...pF
Type	-Not indicated...ceramic capacitor -(S)...S series aluminium electrolytic capacitor -(Z)...Z series aluminium electrolytic capacitor -(SU)...SU series aluminium electrolytic capacitor -(K)...K series aluminium electrolytic capacitor -(P)...P series polyester system -(SXE)...SXE series aluminium electrolytic capacitor -(SRA)...SRA series aluminium electrolytic capacitor -(KME)...KME series aluminium electrolytic capacitor

- Diode without indication...MA165

- Circuit Diagram is subject to change without notice for further development.

19.4. Timer Table

Name	Time	Test Mode (Shortened CN-TEST pin)	Remarks
Hour Timer	1 hr. 10 min. 1 min.	1 min. 10 sec. 1 sec.	
Time delay Safety Control	2 min. 58 sec.	0 sec.	
Forced Operation	60 sec.	0 sec.	
Time Save Control	7 min.	42 sec.	
Freeze Prevention Control	3 min.	0 sec.	
Compressor Reverse Rotation Detection	2 min.	0 sec.	
Starting Current Control	1.6 sec.	0 sec.	
Jet Mode	15 min.	15 sec.	
Random Auto Restart Control	0 ~ 62 sec.	0 ~ 6.2 sec.	Add value to Time De Control.

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